2033
Auxiliary Follower

Installation and Operating Instructions

The 2033 Auxiliary Follower can be used with all American Dynamics Matrix Switching Systems employing control code(s). The 2033 Auxiliary Follower is used to provide a relay closure when an auxiliary or alarm command has been issued. Other uses include the operation of panel displays showing called or alarmed camera sites.

AMERICAN DYNAMICS

The installation of this product should be made by qualified service personnel and should conform to all local codes.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,

DO NOT REMOVE COVERS (OR BACK) .

NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

WARNING

To reduce the risk of fire or shock hazard, do not expose this product to rain or moisture.

This equipment has been tested and found to comply with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.

UNPACKING AND INSPECTION

Unpack carefully. This is an electronic product and should be handled as such. Compare the items received with the packing list with your order.

Be sure to save:

1. The shipping cartons and insert pieces. They are the safest material in which to make future shipments of the product.
2. The IMPORTANT SAFEGUARDS sheet.
3. These Installation and Operating Instructions.

MAINTENANCE

User maintenance of this unit is limited to external cleaning and inspection. For specific recommendations refer to the IMPORTANT SAFEGUARDS sheet packaged with this product.

INSTALLATION AND SERVICE

If you require information during installation of this product or if service seems necessary, contact the Sensormatic Repair and Service Department at (800) 442-2225. You must obtain a Return Authorization Number and shipping instructions before returning any product for service.

Do not attempt to service this product yourself. Opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified personnel.

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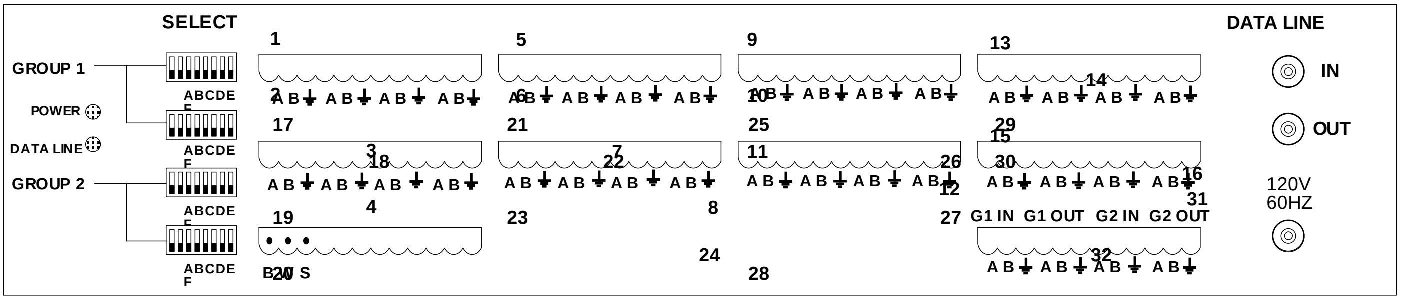


Figure 1 - 2033 Auxiliary Follower

DESCRIPTION

The 2033 Auxiliary Follower provides relay closures which correspond to an auxiliary call for a selected or switched camera. The auxiliary function(s) (either 1, 2, or 3) can be activated eithere manually from a keyboard, from a system tour, or from an alarm. The Auxiliary Follower can address one to 1024 cameras in groups of 16.

The 2033 is typically used where a high concentration of auxiliary devices (i.e., electronic door switches or auxiliary lighting) need to be controlled, but where pan/tilt functions are not necessary. Note: The use of the 2033 does not negate the use of the pan/tilt control at a remote site.

Additionally, the 2033 can provide contact closures coordinated with an alarm callup. The contact closure occurs when the corresponding camera is automatically placed into alarm from an external device.

The 2033 receives data from either a LAN output of a 1995, a DATA LINE output of a 1996, or a Control Code output of a Matrix Switching System. If the 2033 operates via control code, a dip switch located on the 2033's main printed circuit board, is used to select the Control Code mode.

The 2033 filters the incoming codes for auxiliary commands and camera group. The unit contains 32 addressable, normally open relays. The 32 relays can be grouped in series or in two alike groups of 16. Each of the two groups can control 16 relays.

FEATURES

The 2033 Alarm Responder has the following features:

- *SCREW TERMINAL WIRE CONNECTORS*
- *LED INDICATOR FOR "VALID" CODE*
- *LED POWER INDICATOR*
- *DIP SWITCH SELECTION FOR CAMERA GROUP AND AUXILIARY*
- *COMPATIBLE WITH EITHER DATA LINE OR CONTROL CODE*
- *UNIVERSAL MOUNT CABINET*

IF YOU ENCOUNTER ANY PROBLEMS OPERATING THIS UNIT, OR NEED TECHNICAL ASSISTANCE, CALL OUR SERVICE CENTER.

within the United States 1-800-442-2225
outside the United States (845) 624-7640

INSTALLATION

The Universal cabinet of a 2033 Auxiliary Follower may be surface or rack mounted in any convenient location with adequate ventilation. For proper ventilation allow at least three feet (1m) form the rear of the racks to any wall and one EIA rack height (1 3/4 inches) between units.

Mounting

The 2033 is shipped with mounting ears flush with the front panel, and can be mounted to the front of a standard 19-inch rack.

The mounting ears of the 2033 can also be placed such that they are flush with the rear panel. This allows the 2033 to be mounted to the rear of a rack equipped with mounting channels.

The unit can also be surface mounted. Mount the ears so that they are either up or down flush with the top and bottom covers of the unit.

For optimum performance, the 2033 should be located near the Switching Systems (1995, 1996, 2050, or 1024) or near the Control Code Line of a Matrix Switching System. Avoid heat sources or poorly ventilated racks.

DIP Switches

DIP switches, located on the rear panel, are used in the 2033 to determine auxiliary settings and camera group selections.

The 2033 Auxiliary Follower provides relay closures only; they are not intended to supply power (see the relay contact on page 5). The relay closures on the 2033 are activated by an auxiliary call. The DIP switches on the 2033 are used to determine the auxiliary setting (1, 2, or 3) and the camera group (1 - 1024 in groups of 16; i.e., 1-16, 17-32, 33-48 ...977-992, 993-1024). The two top DIP switches (1&2) set the GROUP 1 relays. The lower two DIP switches (3&4) set the GROUP 2 relays. Each relay group contains an auxiliary setting and a camera setting. See the illustration below.

The first and third switches are programmed to correspond to the desired auxiliary (1, 2, or 3). For auxiliary settings see Table 2, page 4. The second and fourth switches are programmed to correspond to the desired camera block (1 - 1024). For camera settings see Table 1, page 3.

Note: Group 1 and Group 2 can be set to two different auxiliary and camera groups, if desired.

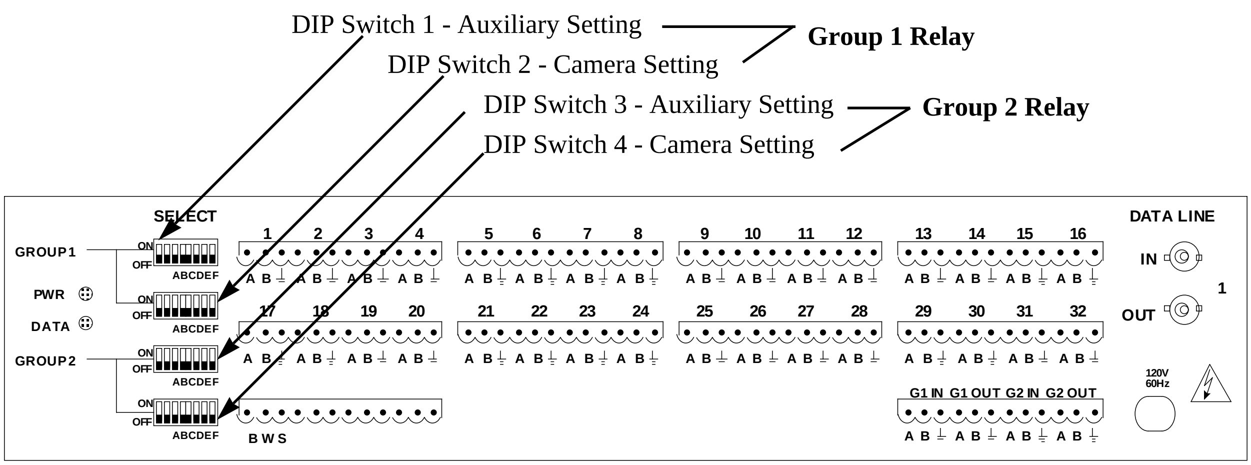


TABLE 1
AUXILIARY FOLLOWER **CAMERA SELECT**
0 = OFF, 1=ON

8-position DIP Switch								DIP SWITCHES 2 & 4
		A	B	C	D	E	F	
1	2	3	4	5	6	7	8	CAM
0	0	0	0	0	0	0	0	1 - 16
0	0	0	0	0	0	0	1	17 - 32
0	0	0	0	0	0	1	0	33 - 48
0	0	0	0	0	0	1	1	49 - 64
0	0	0	0	0	1	0	0	65 - 80
0	0	0	0	0	1	0	1	81 - 96
0	0	0	0	0	1	1	0	97 - 112
0	0	0	0	0	1	1	1	113 - 128
0	0	0	0	1	0	0	0	129 - 144
0	0	0	0	1	0	0	1	145 - 160
0	0	0	0	1	0	1	0	161 - 176
0	0	0	0	1	0	1	1	177 - 192
0	0	0	0	1	1	0	0	193 - 208
0	0	0	0	1	1	0	1	209 - 224
0	0	0	0	1	1	1	0	225 - 240
0	0	0	0	1	1	1	1	241 - 256
0	0	0	1	0	0	0	0	257 - 272
0	0	0	1	0	0	0	1	273 - 288
0	0	0	1	0	0	1	0	289 - 304
0	0	0	1	0	0	1	1	305 - 320
0	0	0	1	0	1	0	0	321 - 336
0	0	0	1	0	1	0	1	337 - 352
0	0	0	1	0	1	1	0	353 - 368
0	0	0	1	0	1	1	1	369 - 384
0	0	0	1	1	0	0	0	385 - 400
0	0	0	1	1	0	0	1	401 - 416
0	0	0	1	1	0	1	0	417 - 432
0	0	0	1	1	0	1	1	433 - 448
0	0	0	1	1	1	0	0	449 - 464
0	0	0	1	1	1	0	1	465 - 480
0	0	0	1	1	1	1	0	481 - 496
0	0	0	1	1	1	1	1	497 - 512
0	0	1	0	0	0	0	0	513 - 528
0	0	1	0	0	0	0	1	529 - 544
0	0	1	0	0	0	1	0	545 - 560
0	0	1	0	0	0	1	1	561 - 576
0	0	1	0	0	1	0	0	577 - 592
0	0	1	0	0	1	0	1	593 - 608
0	0	1	0	0	1	1	0	609 - 624
0	0	1	0	0	1	1	1	625 - 640
0	0	1	0	1	0	0	0	641 - 656
0	0	1	0	1	0	0	1	657 - 672
0	0	1	0	1	0	1	0	673 - 688
0	0	1	0	1	0	1	1	689 - 704
0	0	1	0	1	1	0	0	705 - 720
0	0	1	0	1	1	0	1	721 - 736
0	0	1	0	1	1	1	0	737 - 752
0	0	1	0	1	1	1	1	753 - 768
0	0	1	1	0	0	0	0	769 - 784
0	0	1	1	0	0	0	1	785 - 800
0	0	1	1	0	0	1	0	801 - 816
0	0	1	1	0	0	1	1	817 - 832
0	0	1	1	0	1	0	0	833 - 848
0	0	1	1	0	1	0	1	849 - 864
0	0	1	1	0	1	1	0	865 - 880
0	0	1	1	0	1	1	1	881 - 896
0	0	1	1	1	0	0	0	897 - 912
0	0	1	1	1	0	0	1	913 - 928
0	0	1	1	1	0	1	0	929 - 944
0	0	1	1	1	0	1	1	945 - 960
0	0	1	1	1	1	0	0	961 - 976
0	0	1	1	1	1	0	1	977 - 992
0	0	1	1	1	1	1	0	993 - 1008
0	0	1	1	1	1	1	1	1009- 1024

TABLE 2
AUXILIARY FOLLOWER UNIT
AUXILIARY SELECT
0 = OFF, 1=ON

DIP SWITCHES 1 & 3 — 8-position DIP Switch

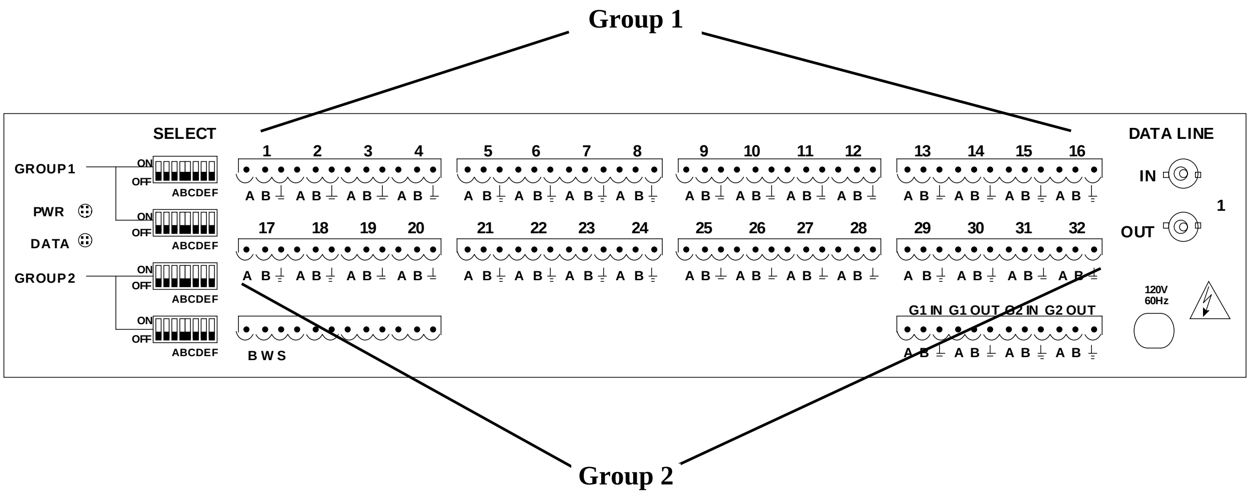
			A	B	C	D	E	F
AUX	1	2	3	4	5	6	7	8
1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	1	0
off	0	0	0	0	0	0	1	1

CONNECTIONS

Relay Connections

Two groups (GROUP 1 and GROUP 2) of four 12-pin connectors are provided on the rear panel. Each group provides connection for double pole relays. The two groups provide 32 pairs of relay closures. Relay contact ratings are 24 VAC, 0.6 A resistive load, 2 Amp, 30VDC. Power through the relays is not supplied by the 2033.

For ease of attaching to external equipment, each connector is supplied with a mating screw terminal connector, Insert the three wires of a relay pair and shield into the slots of the rear panel mating connectors and tighten the hold-down screws. When all lines have been connected, insert the 12-pin connectors into the rear panel mating terminals. See Figure 2.



The relay connections to the unit must be made with shielded, 2-wire twisted pair (22 AWG or heavier gauge wire or equivalent). The shield wire is to be connected to the grounding terminal.

Each connector is labeled with a relay number, from 1 through 32, an A, a B, and a ground symbol. The A and B on each connector are the contacts for one side of each double pole relay. The ground pin is provided for shielding.

The lower right connector on the rear of the of the 2033 contains the common input and output connections for each group. The four sections of the connector are labeled with the group number G1 IN, G1 OUT, G2 IN, and G2 OUT, an A, B, and ground. These connections are provided for easy cascading to additional 2033's.

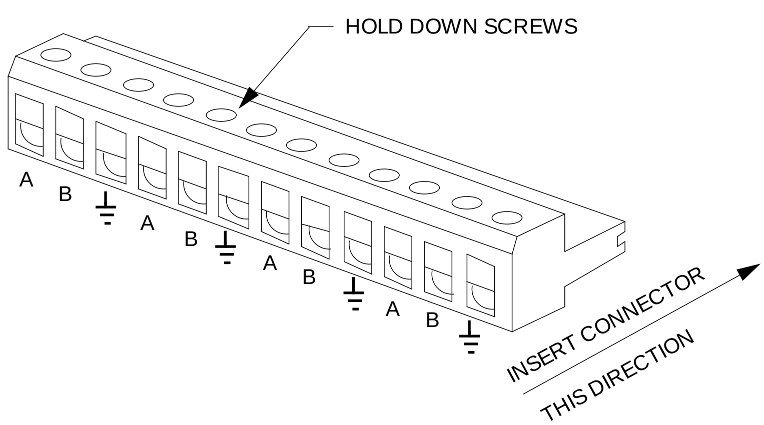


Figure 2 - Typical 12-Pin Connector

Data Line Connections (1995 or 1996)

A DATA LINE is connected from the DATA LINE OUT BNC on a Matrix Bay to the DATA LINE IN BNC on the rear panel of the Auxiliary/Alarm Follower. (Older 1995 systems used the term LAN IN/OUT). Use a good grade RG-59 video cable (Belden 8241 or equivalent). The DATA LINE OUT BNC on the Auxiliary/Alarm Follower must be fitted with a 75-ohm BNC terminator, or if used to loop to other DATA LINE controlled equipment, it must be terminated at the end of the run.

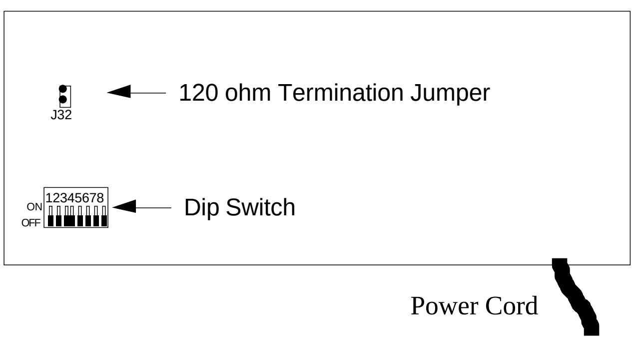
The LED labeled DATA LINE on the 2033 will illuminate when a valid code is received on the Data line.

Control Code Line Connections (1650A or 2150)

The terminal connector located at the lower left side of the 2033 is used for Control Code connections. The connector is labeled B, W, and S. The B is for the BLACK code wire, the W is for the WHITE code wire, and the S is for the SHIELD wire.

The Control Line connections to the Auxiliary Follower must be shielded, 2-wire twisted pair (Belden 8760, for Plenum, use Belden 88760 or equivalent).

If the Auxiliary/Alarm Follower is used with Control Code, remove the top cover of the unit and locate the DIP switch on the printed circuit board. Turn the eighth switch ON. This enables the use of the Control Code.



Control Code lines must be terminated in 120 ohms. Check the last unit on each line to ensure that 120-ohm termination is present. Intermediate units on a Control code line must not have 120-ohm termination. To remove the termination of the 2033 code line, jumper J32 must be removed from the main PCB.

In seitching systms using Control Code, the Auxiliary Follower must be connected to code line that contains the cameras and monitor to be followed.

For 1650A operation, there can be a maximum of four control lines. The first control line is for monitors 1-8 and cameras 1-64. The second control line is fo monitors 1-8 and cameras 65-128. The third control line is for monitors 9-16 and cameras 1-64. The fourth control line is for monitors 9-16 and cameras 65-128.

For 2150 Systems, one control line is available for a maximum of 32 cameras and five monitors.

Code Lines are NEC Class 2, low voltage circuits. Where local codes permit, installation conduit is not required. Avoid installation near high voltage sources or other potential interference sources. Control Code lines must be terminated in 120 ohms. Check the final code-controlled unit on each code line and, if a 120 ohm termination is not present, add one.

Up to three Control devices may be “daisy-chained” on a single code line. When devices are daisy-chained, intermediate devices must not terminate the control line. Be sure to check that the intermediate equipment does not contain a 120 ohm terminating resistor. If it does, remove it. See Figures 3 and 4 for “STAR” and “DAISY-CHAIN” configurations.

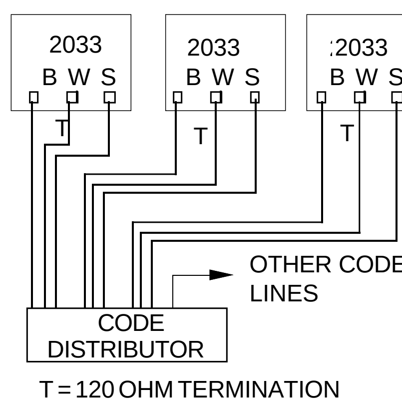


Figure 4 - Code "Star" Configuration"

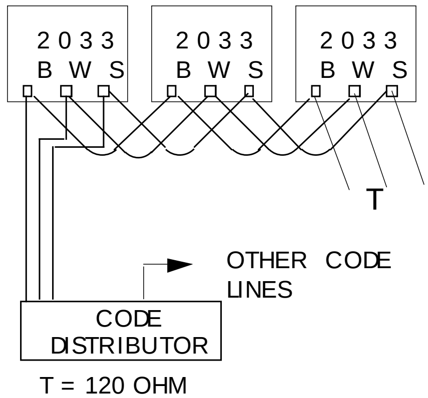


Figure 4 - Code "Daisy Chain" Configuration

OPERATON

After completing the Data Line (or Code) connections, plug in the power cord. When the 2033 receives a valid code through the Data Line inputs, the green Data Line LED illuminates. If the green code LED is flickering, the code lines may be backwards. Try reversing the black and white code lines.

> **CAUTION -** Due to the presence of non-insulated components with hazardous voltages, the following internal adjustments should be performed by qualified service personnel only.

If the DATA LINE LED does not illuminate, check for proper operation of the System (1650, 1995, 1996, or 2150). Check all your connections. If all the connections are as they should be, and the 2033 still does not operate properly, unplug the 2033, remove the top cover, and check the DIP switch settings. Refer to the DIP switch illustration on page 6.

If connected to a 1995 or 1996 System, all the DIP switches should be in the OFF position. If connected to a 1650 or a 2150 System, the position for the eighth DIP switch should be in the ON position.

Power Sources

The 2033 Auxiliary Follower does not contain an On/Off Switch. The socket outlet shall be located near the equipment and shall be readily accessible. The 120 V units are supplied with a pendant 3-wire cord and plug for mating to the primary source outlet. The 230 V units are supplied with a Euro style IEC 320 type inlet. A suitable detachable cord should be connected between the IEC 320 inlet and the power source. The cord should conform to all national and local use code requirements. There is a green LED power indicator, located on the rear panel, that illuminates when power is applied.

2033 models are configured for 120V, 50/60 Hz or 230V, 50/60Hz, primary power source, as follows:

AD2033: 120V, 50/60Hz
AD2033-1: 230V, 50/60Hz

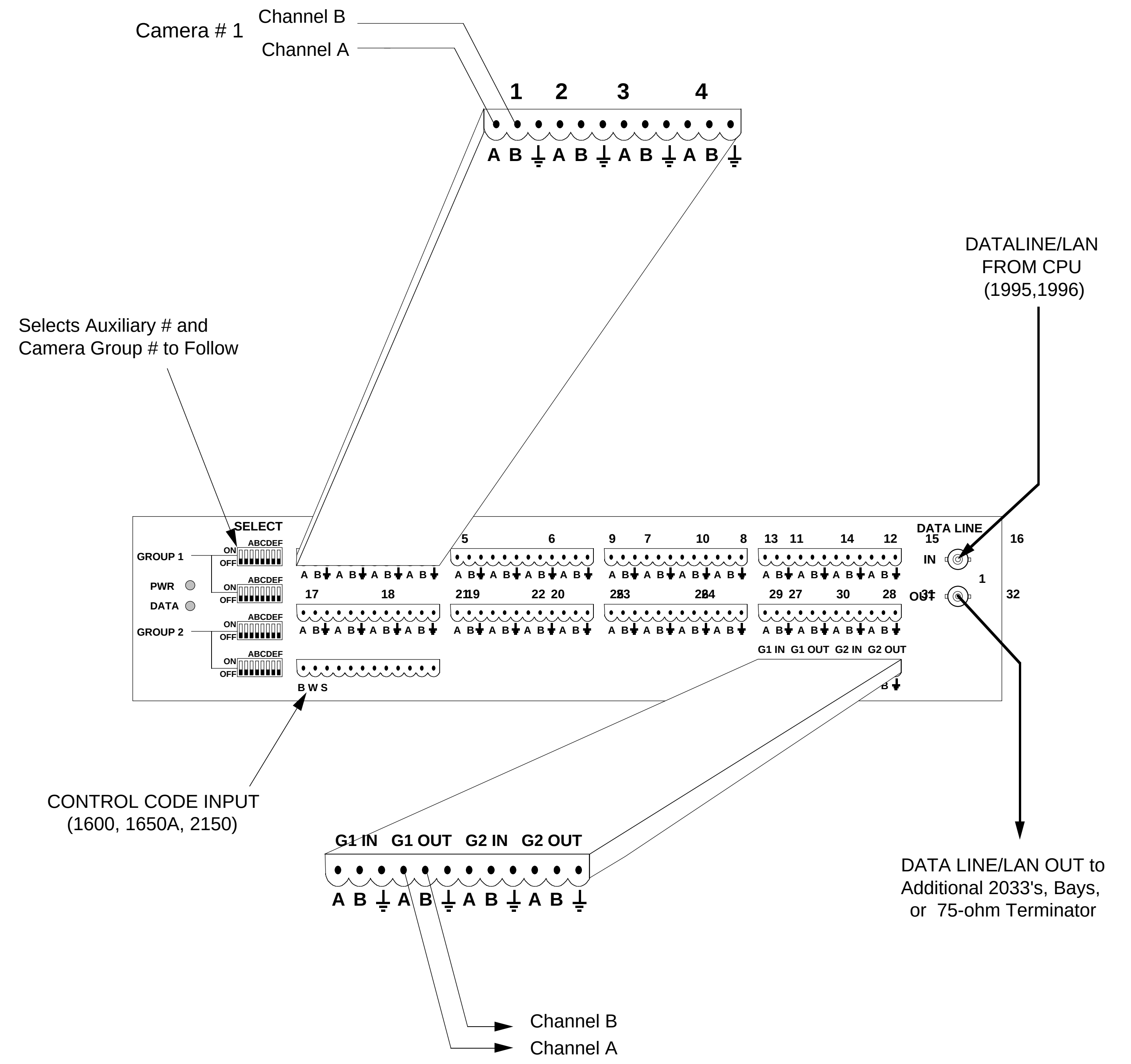
Powering Up

DO NOT CONNECT THE EQUIPMENT TO THE POWER SOURCE UNTIL ALL CONNECTIONS HAVE BEEN PROPERLY MADE.

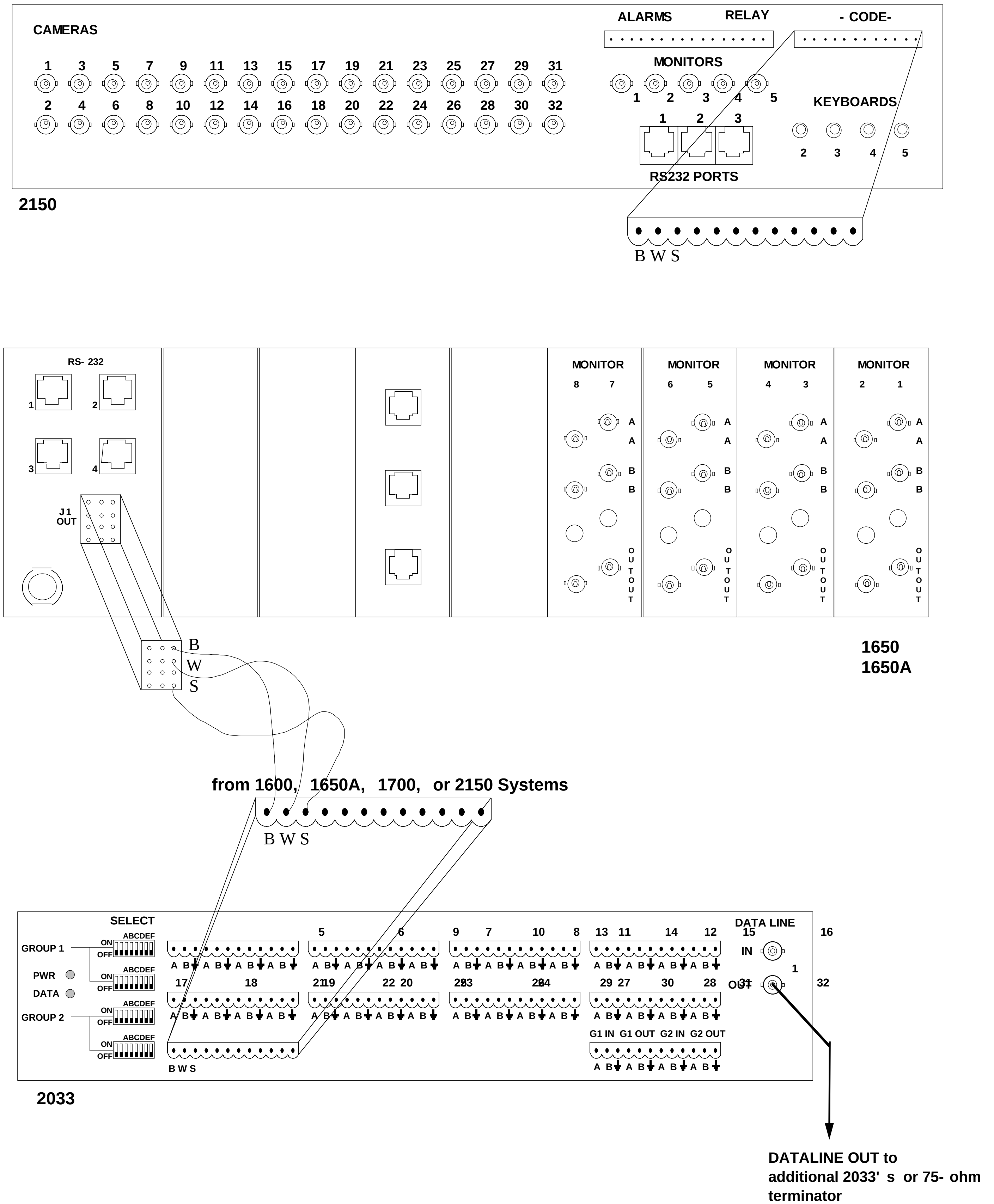
Make all connections to the 2033, (Data Lines, and Relay connections) and set the DIP switches before applying power. If a valid code is being received, the green DATA LED will illuminate and glow steadily. If it flickers there may be a problem with the Control Input line.

There are no user servicable parts. For specific recommendations, refer to IMPORTANT SAFEGUARDS FOR COMMERCIAL VIDEO PRODUCTS.

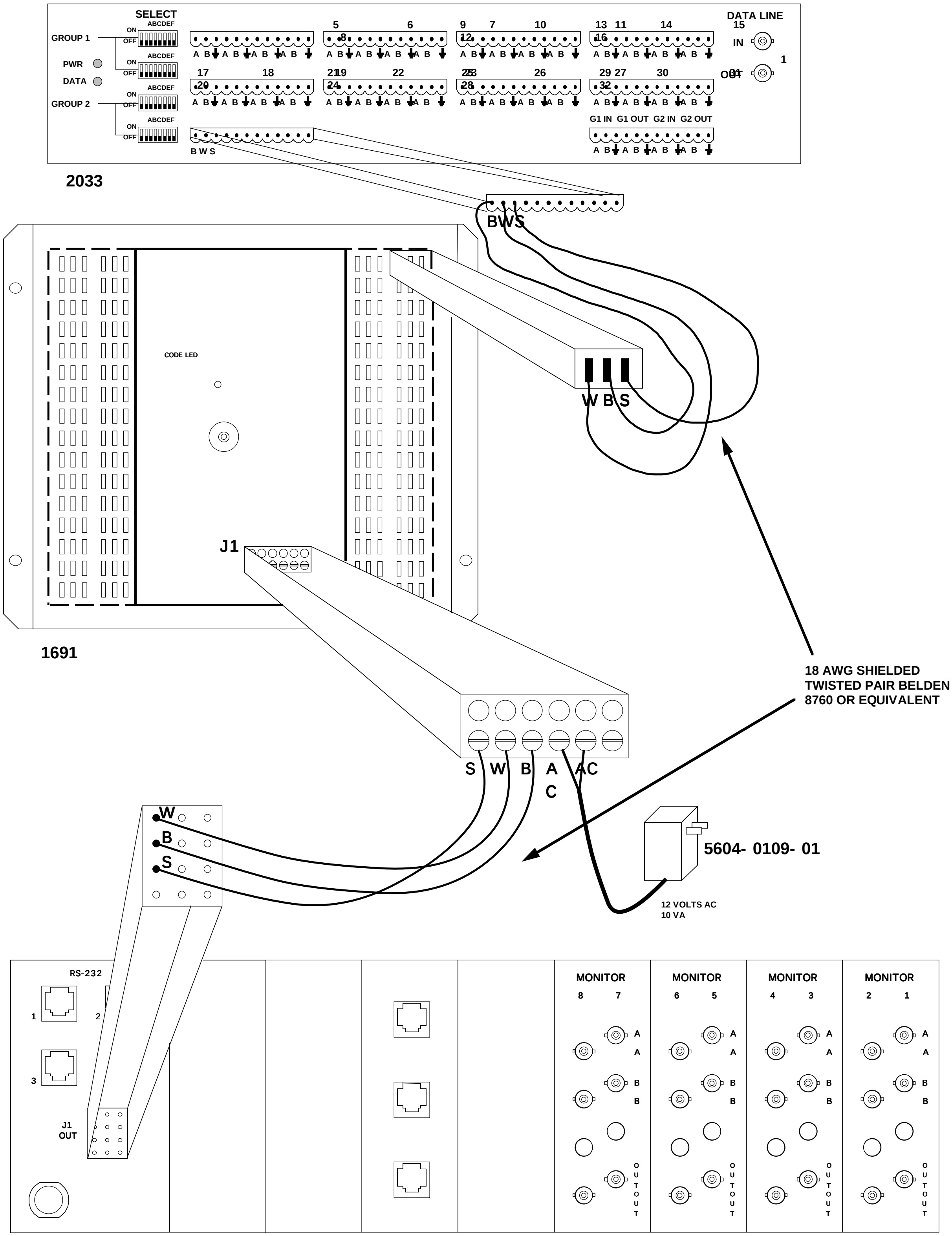
APPENDIX


Camera # 1
Channel B
Channel A
1 2 3 4
A B A B A B A B
DATALINE/LAN FROM CPU (1995,1996)
Selects Auxiliary # and Camera Group # to Follow
SELECT
GROUP 1
PWR
DATA
GROUP 2
ON
OFF
ABCDEF
DATA LINE
IN
OUT
B W S
G1 IN G1 OUT G2 IN G2 OUT
CONTROL CODE INPUT (1600, 1650A, 2150)
DATA LINE/LAN OUT to Additional 2033's, Bays, or 75-ohm Terminator
G1 IN G1 OUT G2 IN G2 OUT
A B A B A B A B
Channel B
Channel A

TYPICAL SYSTEM CONNECTIONS
2033 AUXILIARY FOLLOWER

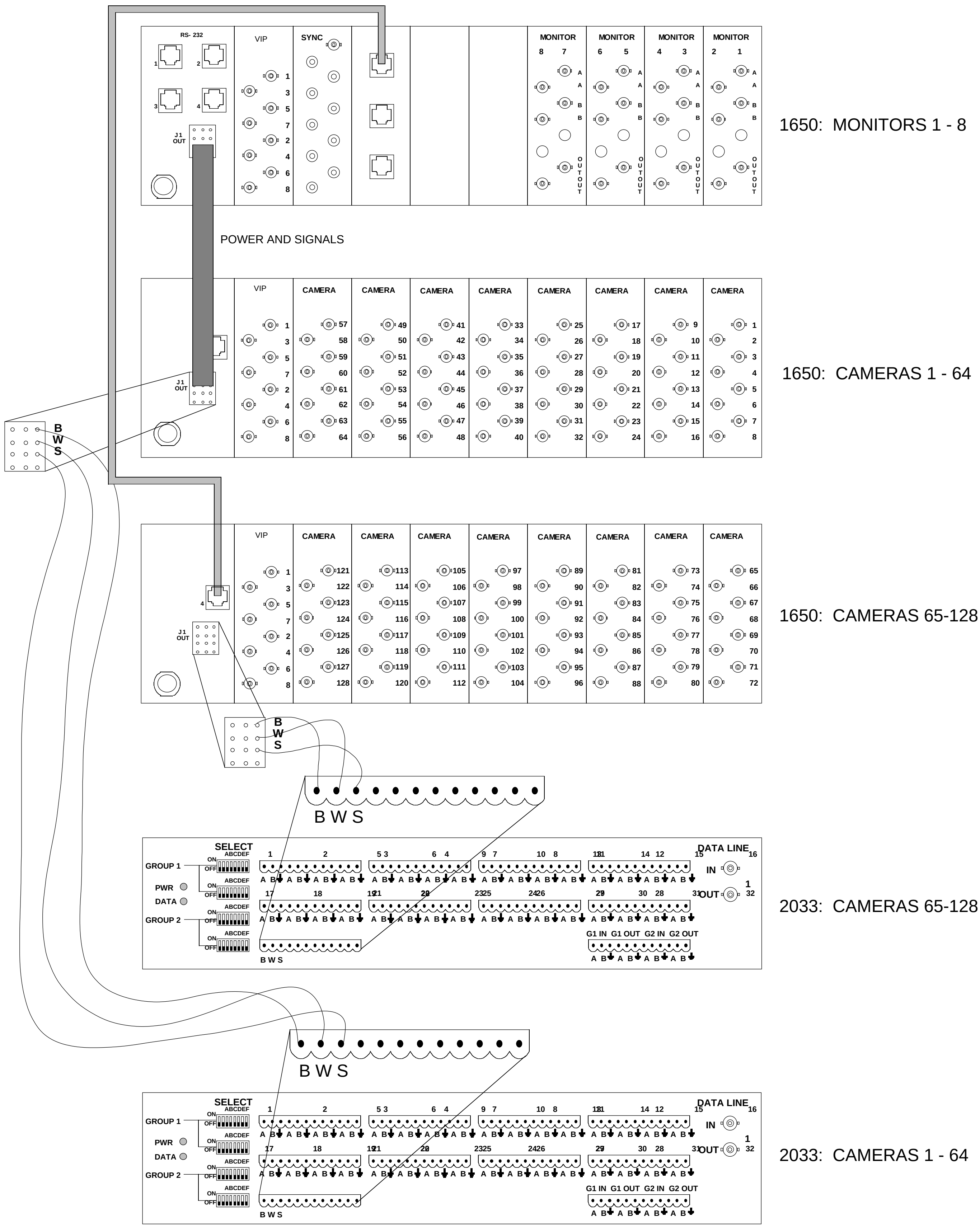


TYPICAL SYSTEM CONNECTIONS
2033 AUXILIARY FOLLOWER



Showing a 1650, 1650A System

TYPICAL SYSTEM CONNECTIONS
2033 AUXILIARY FOLLOWER with 1650



DECLARATION OF CONFORMITY

According to ISO/IEC Guide 22 and EN45014

Manufacturer's Name: Sensormatic Electronics Corporation

Manufacturer's Address: 1 Blue Hill Plaza
2nd Floor
Pearl River, New York, 10965 USA

Declares, that the product listed below:

Name/Type: Auxiliary Follower

Model Number: AD2033-1

complies with all applicable directives as demonstrated by conformance to the following Product Specifications:

Safety: EN 60950: 1992

EMC: EN 50130-4: 1995
EN 55022: 1994 , Class B
EN 61000-3-2: 1995
EN 61000-3-3: 1995
EN 61000-4-2: 1995
EN 61000-4-3: 1996
EN 61000-4-4: 1995
EN 61000-4-5: 1995
EN 61000-4-6: 1996
EN 61000-4-11: 1994

Supplementary Information:

The products herewith comply with the requirements of the Low Voltage Directive, 73/23/EEC as amended by 93/68/EEC, and the EMC Directive, 89/339/EEC as amended by 93/68/EEC.

Pearl River, NY, USA 15 December, 2000

Harold D. Johnson, Ph.D.
Director of Engineering

SPECIFICATIONS

Electrical Ratings:	AD2033	120 VAC, 50/60Hz, 15 W
	AD2033-1	230 VAC, 50/60Hz, 125 mA
Relay Contact Ratings:	0.6 A, 24 VAC; 2 A, 30 VDC	
Mounting:	Surface Mount or Rack Mount	
Weight:	7 lbs (1.4 kg)	
Finish:	Shadow Gray	
Dimensions:	17" W x 3.5" H x 8" D (432 x 89 x 203 mm)	

Sensormatic Video Systems Divsion
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